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tions of the mountains, and although the moraines which they have left as evidence of their former extension are often large and conspicuous, they are insignificant in comparison with the detrital masses formed by aqueous erosion. There is nothing anywhere in California which indicates a general glacial epoch during which ice covered the whole country and moved bodies of detritus over the surface, independently of its present configuration, as is seen throughout the North-eastern States.

The same condition of things prevails in Nevada and through Oregon, as far as explored by the members of the Survey. The detritus seems always to be accumulated at the base of the mountains — gravel, boulders, and sand lying below and not far distant from the bed of rock of which these materials once formed a part, and from which they appear to have been detached by weathering and aqueous erosion.

From the observations of Messrs. Ashburner and Dall, it would appear that no evidences of Northern Drift have yet been detected on this coast, even as far north as British Columbia or Russian America. Neither of these gentlemen have observed any indication of a transportation of drift materials from the north towards the south, or of any condition of things similar to that which must have existed in the Eastern States during the diluvial epoch.—*Proceedings of the California Academy of Natural Sciences.* 1866. Vol 3, part iii.

MICROSCOPY.

TEST OBJECTS FOR THE MICROSCOPE. — To such wonderful perfection has this process been carried, that M. Nobert, of Griefswald, in Prussia, has engraved lines upon glass so close together, that upwards of eighty thousand would go in the space of an English inch. Several series of these lines were engraved upon one slip of glass. By these the defining power of any object-glass could be ascertained. As test objects, they are equal to, and even rival, many natural objects which have hitherto been employed for this purpose. The delicate lines on some of the diatomaceæ are separated from each other by the 1-50,000th of an inch, while the finest lines engraved by M. Nobert are not more than the 1-100,000th of an inch apart.

The Podura scale is a most excellent "test object." According to Prof. J. W. Bailey, the diatoms *Grammatophora subtillissima* and *Hyalodiscus subtilis* are the most delicate tests. — BEALE.

DIATOMS. — These beautiful objects for the microscope are minute silicious plants, which from their ability to move about independently in the water, and from being supposed to have stomachs, were for a long while thought to be animals, and placed among the Infusoria.

Their hard silicious shells are characterized by being marked with fine delicate lines or rows of dots. They are found in all our waters, whether salt, brackish, or fresh. Their hard shells are preserved under bogs, where they form layers, resembling fine white silicious sand, and also in guano. They also occur fossil at Bermuda, Oran in Algeria, and Richmond, Va.

OBJECT TEACHING IN NATURAL SCIENCE.—I am strongly of opinion that it is more necessary than ever that we should teach as much as possible by the eye. In teaching any branch of natural science, the *demonstration* should be combined with *oral* teaching. The student should *see* what is described, and where it is not possible for the teacher to exhibit illustrative specimens, good models, drawings, and explanatory diagrams should be supplied. It is the duty of every teacher to study how to communicate knowledge *most easily* and *most clearly*, and to save the student as much time as possible; for it is not likely that the amount of work which is required by the various examining boards will be reduced, nor indeed is it desirable that it should be. It is, therefore, incumbent upon teachers to facilitate the communication of knowledge in every possible way. A lecturer on every branch of microscopic inquiry can now show his pupils the structures he describes. For the last three years I have carried out this plan myself, and have found that it works admirably. I am able to demonstrate from eight to twelve microscopical specimens to a large class in the course of an hour, and it need scarcely be added, such a system adds greatly to the interest of lectures, and enables the student to acquire a correct idea of structure, which it is impossible for him to obtain by reading, or from mere description with the aid of diagrams.—BEALE'S "*How to Work with the Microscope.*"

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SCIENTIFIC EXPEDITIONS.

Mr. C. F. Hartt, now lecturing on Natural History in New York City, who gained much experience as an explorer in Brazil, in the late Thayer Expedition to the Amazon, under the conduct of Prof. Agassiz, purposes in a few weeks to visit anew the coast of Brazil, and study the coral reefs previously discovered by him, and also the marine fauna of these shores. Mr. Hartt goes thoroughly prepared for these important researches, by his previous experience in exploring the Geology of Nova Scotia, while connected with the Provincial Geological Survey; and also as a student and assistant for several years in the Museum of Comparative Zoölogy, at Cambridge.

Mr. J. F. Allan, of Springfield, Mass., author of a series of ornithological papers now publishing in the NATURALIST, and also one of